Department of Health & Human Services
NATIONAL INSTITUTES OF HEALTH
National Institute of Biomedical Imaging and Bioengineering

Defining the State-of-the-Art of Biomedical Imaging: Research Needs for the Future

Session 3: Data Reconstruction, Interpretation, and Informatics

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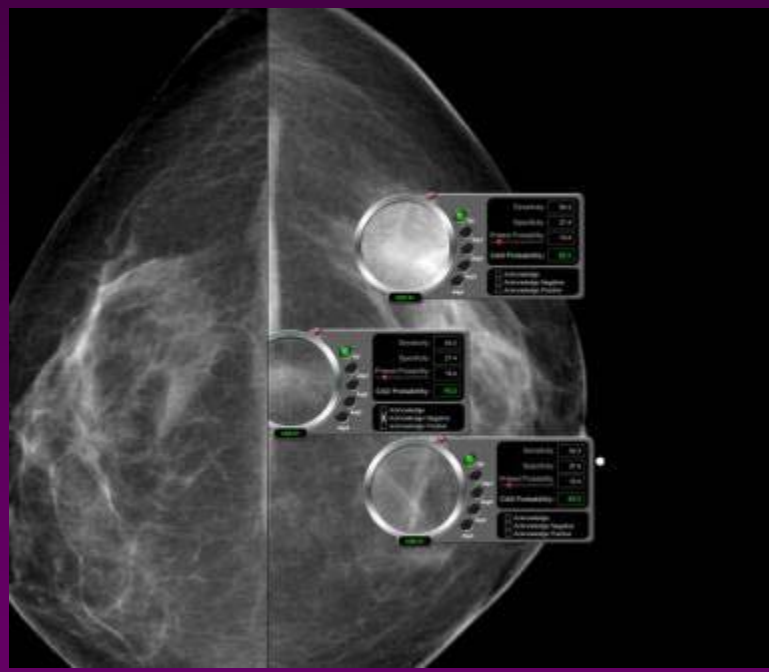
NORTHWESTERN RADIOLOGY

Technology Development and Assessmen

- Algorithms (2D,3D, CAD)
- Displays / Graphical user interfaces / Communication
- Lexicons
- Human Performance
- Decision support tools /
  - feedback loops
- Focus on outcomes / efficiency
  - Make imagers/imaging better in

    reducing the uncertainty of clinicians



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Architectures for information integration

- Standards for new algorithm architectures
- Deliver decision support to point of care
- Develop grid (I2/HGI) services for post processing
- Data mining from (heterogeneous) information source
  - Extension of common information models (HL7 RIM)
- Deliver image information across enterprise boundari

➢ Deliver ***any*** information into the clinical workflow

Outcomes Research in Radiology

- Practicing evidence based radiology
  - What's beyond appropriateness criteria?
- Assessment of clinical radiology practices and procedures
- Assessment of utilization of radiology procedures

➢ Developing content and assessing the impact of new information in changing standards of care

Training in Imaging Informatics

- Medical students
- Engineering students
- Imaging Informatics fellowships
- Institutional training grants in Imaging Informatics
- Nat. Progs. of Excellence in Imaging Informatics?
  - Analogous to NPEBC

Summary

- Information system technology R&D & assessment
- Incorporation of imaging tools and techniques into clinical practice and assessment thereof
- Health services research in radiology
- Training and educating the next generation